

REMARKS

This paper is responsive to the Office Action mailed December 11, 2008. In the present Amendment, claim 4 has been amended. Thus, upon entry of this Amendment, claims 1, 2, 4-6, 8-10, 12, and 14-18 will be pending, of which claim 1 is independent.

Claim Rejections – 35 U.S.C. § 112, second paragraph

The Office Action rejects claims 4-6 and 8-9 as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Applicants respectfully note that upon entry of this Amendment, claim 4 will have been amended to further clarify the invention. Applicants submit that the amendment does not introduce new matter. Applicants respectfully submit that claim 4 is allowable in view of the amendment. Applicants further submit that claims 5-6 and 8-9 depend from claim 4 and are allowable at least because they depend from an allowable base claim. Applicants respectfully submit that this rejection has been overcome and respectfully request that this rejection be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 2, 4-6, 10, and 14-18 are rejected under 35 U.S.C. § 103. Applicants initially note that the Office Action appears to incorrectly set forth the rejection as “anticipation” under 35 U.S.C. § 103. Applicants assume that the Office intended to set forth the rejection as an obviousness rejection under 35 U.S.C. § 103 over the cited art. Thus, if the Office did intend to set forth the rejection pursuant to an anticipation standard under § 102, Applicants respectfully request that the next Action be made non-final so that Applicants may have a full and fair

opportunity to address the rejection. Applicants have assumed for the purposes of this Response that the rejection is set forth under § 103.

Okazaki in view of Wierer, further in view of Weller

The Office Action rejects claims 1, 2, 4-6, 10, and 14-18 as allegedly unpatentable under 35 U.S.C. § 103, over Okazaki (U.S. Patent 6,495,862), in view of Wierer (U.S. Pub. 2005/0082545), further in view of Weller (U.S. Pub 2002/0132083).

Applicants respectfully submit that the Office Action fails to establish a *prima facie* case of obviousness. In establishing a *prima facie* case of obviousness, the Manual of Patent Examining Procedure (MPEP) sets forth three basic requirements. In particular, there must be 1) some motivation (or at least some “reason”) to combine the cited references (MPEP 2143.01); 2) a reasonable expectation of success (MPEP 2143.02); and 3) the combination teaches each and every element of the claimed invention (MPEP 2143.03).

Regarding claim 1, the Office Action asserts that Okazaki discloses a method of making an LED comprising the steps of “forming a transfer layer on at least a part of the transparent crystal substrate or the light-emitting layer (Col. 5, lines 31-35), softening or setting said transfer layer upon supplying an energy thereto (Col. 5, lines 43-46), forming a minute unevenness structure for preventing multiple reflection based on the minute unevenness structure transferred to the transfer layer (Col. 5, lines 47-52).” (Office Action, page 3).

Applicants note that the Office Action does not fulfill the third requirement of a *prima facie* case- specifically, that the cited art disclose each and every element recited within the method of claim 1. In particular, Applicants note that claim 1 recites:

A production method for producing a light-emitting device in which a light-emitting layer at least including an n-type semiconductor layer and a p-type semiconductor layer is layered on a transparent crystal substrate, comprising:

applying a silicon organic solvent to at least a part of the transparent crystal substrate or the light-emitting layer to form a transfer layer on at least a part of the transparent crystal substrate or the light-emitting layer;

softening or setting said transfer layer upon supplying an energy thereto;

pressing a mold formed with a minute unevenness structure against the transfer layer to transfer the minute unevenness structure to an outer surface of the transfer layer under a pressure of 5 MPa or higher and 150 MPa or lower; and

dry etching the transfer layer with a chlorine gas using the transfer layer as a resist mask to form a minute unevenness structure for preventing multiple reflection in the transparent crystal substrate or the light-emitting layer.

In contrast, the Office Action recites steps of “forming a transfer layer...” and “forming a minute unevenness structure...” which are not expressly claimed in the pending claims.

Applicants respectfully note that the PTO’s position regarding the necessity of reciting each and every element of Applicant’s claim is set forth in MPEP § 2143.03. The MPEP clearly states that “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).” Applicants respectfully submit that to the extent that the Office Action paraphrases the language of the pending claims, the Action fails to properly consider all words of the claim, and as such, fails to teach each and every element of the pending claims. Further, Applicants respectfully note that

the pending claims are directed to a method. Applicants request that deference be given to the actual steps of the method disclosed in the claims.

Additionally, in setting forth the rejection over the combination of Okazaki in view of Wierer, further in view of Weller, the Office Action does not fulfill the second requirement of a *prima facie* case. Applicants respectfully submit the Office Action does not establish that there is a reasonable expectation, nor any degree of predictability, that the combination set forth by the Office Action would be successful. MPEP § 2143.02 clearly states that “[t]he prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).”

In particular, the Office Action The Office Action states that it would have been obvious to one of ordinary skill “to use a pressing pressure in the claimed range in the imprinting method of Okazaki in view of Wierer for optimization. Examiner notes that: “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation” (Office Action, pg. 5).

Applicants note that the MPEP states that “[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).” Applicants agree with the Office Action, page 5, stating that the disclosure of “Okazaki in view of Wierer teach the features previously outlined, but do not expressly teach...a pressing pressure of the mold is 5 MPa or higher and 150 MPa or lower” (Office Action, pg. 5). Applicants respectfully submit that the cited documents fail to recognize the pressures of the

pending claims, as admitted by the Office Action, and furthermore, the cited documents fail to recognize that pressure as a result-effective variable. Applicants respectfully submit that absent any indication from the cited art that pressure is, in fact, a result-effective variable, any allegation by the Office that optimization of pressure would be obvious is an improper basis for rejection.

Additionally, Applicants submit herewith a Declaration of Hiroshi FUKSHIMA pursuant to 37 C.F.R. § 1.132. Applicants respectfully submit that the Declaration is effective to show that the Office fails to establish that there was a reasonable expectation that the combination set forth by the Office Action would succeed. Applicants respectfully submit that even if, *arguendo*, the pressing pressure is established as a recognized variable by the cited documents (which Applicants submit is not the case), the Declaration is effective to show that discovery of the result-effective parameter of pressing pressure required considerable, non-routine experimentation. In particular, Applicants note that Figures 1 and 3 of the Declaration highlight that the required thickness was not attainable using a standard spin-coating method (Declaration, pg 2) or a standard multi-layered coating (Declaration, pg 2). Applicants respectfully submit that if the procedure for attaining a particular thickness required substantial non-routine experimentation, a variable depending expressly from the resulting structure of the procedure is determined by non-routine experimentation.

Applicants further submit that the Office Action fails to demonstrate the first requirement of a prima facie case by setting forth any motivation for combining the documents cited by the Office Action.

In particular, the Office Action states that Wierer teaches a method of making an LED comprising a step of pressing a mold formed with a minute unevenness structure which would have been obvious to exchange for the methods disclosed within Okazaki "to eliminate steps

required in a photo-lithographic method and thereby reduce manufacturing time/cost” (Office Action, pg. 4). Applications note that “[t]he test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts (MPEP § 2143.01(II)). Applicants respectfully submit that the alleged reduction in manufacturing time or cost as set forth by the Office Action, is not expressed as a benefit of either document. Applicants submit that assuming, *arguendo*, that the documents are combinable, “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless **>the results would have been predictable to one of ordinary skill in the art. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007)” (MPEP 2143.01(III)). However, Applicants respectfully submit that Okazaki, Wierer, and Weller are not properly combinable. Applicants submit that it would not be obvious to one of skill in the art, in view of the cited documents, to use a stamp or microcontact printing with the method of Okazaki at least because the resist layer used in Okazaki has a specific benefit of being softened to have a semi-circular cross section (Figure 2c) prior to etching. Applicants further submit that it is this softened state pattern which is desired in Okazaki (Col. 5, lines 48-56). Subsequently “pressing a mold formed with a minute unevenness structure against the transfer layer” would destroy the structural integrity of the pattern to be transferred in Okazaki. Applicants further submit that the Office Action’s incorporation of TEOS by extraction from the disclosure of Weller is improper. Further, Applicants submit that the Office Action improperly relies on Weller for the disclosure that “a topographical pattern can be made by a nano-imprinting method, wherein a TEOS layer is deposited, imprinted to form a patterned mask, and etched to leave a patterned underlying surface” (Office Action, pg. 5). Initially, Applicants note that one of ordinary skill in the art

would not have considered Weller as analogous art. Applicants note that Weller is directed to magnetic recording media having self organized magnetic arrays. Weller introduces nano-imprint lithography with TEOS as a method for aiding the self-alignment of nanoparticles to aid in the magnetic features of Weller (Abstract, [0034-0035]). Applicants note that Okazaki incorporates a relief pattern/embossment specifically to improve the efficiency of leading light through the Okazaki LED. Applicants respectfully submit that not only is the art of Weller not analogous to the art of Okazaki, the motivation for which each disclosure incorporates a relief pattern addresses separate two very different problems. For instance, Weller does not feature any light emission for which one of ordinary skill would turn to the disclosure of Weller to modify either Okazaki or Wierer. Applicants respectfully submit that for at least the foregoing reasons the documents cited are not properly combinable to arrive at the invention of the pending claims.

For at least the foregoing reasons, Applicants respectfully submit that the Office Action fails to set forth a sufficient *prima facie* case of obviousness. Applicants respectfully request that the Examiner withdraw the rejections of record and consider the pending claims as they apply to a *method* for producing a light emitting device.

Okazaki in view of Wierer, further in view of Weller, further in view of Holman

The Office Action rejects claims 8-9 and 12 under 35 U.S.C. § 103 as unpatentable over Okazaki in view of Wierer, further in view of Weller, and further in view of Holman. Applicants respectfully note that claims 8, 9, and 12 depend from claim 1 and are allowable at least for the reason that they depend from an allowable base claim and because they recite additional features

that are neither anticipated nor obvious over the cited documents. Applicants respectfully submit that the rejection has been overcome and request withdrawal of this rejection.

CONCLUSION

For at least the foregoing reasons, it is respectfully submitted that all pending claims are patentably distinct over the documents employed in the rejection of record. Applicants request reconsideration and withdrawal of the rejections of record. Allowance of the application with an early mailing date of the Notices of Allowance and Allowability is therefore respectfully requested.

If there should be any questions, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully Submitted,
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